

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401**

ORDER NO. R3-2002-0084

GENERAL WASTE DISCHARGE REQUIREMENTS

for

DISCHARGES OF WINERY WASTE

The California Regional Water Quality Control Board, Central Coast Region (hereafter “Regional Board”), finds that:

What is Winery Waste?

1. Winery waste is defined as any byproduct of winemaking operations. Winery waste includes, but is not limited to: pomace (e.g., grape skins, stems, and seeds), lees (wine sediment), tank/barrel/bottle/floor/crush pad wash water (which may contain sterilization and/or preservation chemicals), and water softener waste brine. Typical raw winery wastewater has the following characteristics:

Parameter	Units	Crush Season Range	Non-Crush Season Range
pH	--	2.5 - 9.5	3.5 - 11
BOD ₅	mg/L	500 - 12000	300 - 3500
Dissolved Oxygen	mg/L	0.5 - 8.5	1.0 - 10
Settleable Solids	mg/L	25 – 100	2 – 100
Total Suspended Solids	mg/L	40 – 800	10 – 400
Total Nitrogen	mg/L as N	1- 40	1 – 40
Nitrate	mg/L as N	0.5 - 5	--
Phosphorus	mg/L	1 - 10	1 – 40
Sulfate	mg/L	10 - 75	20 - 75
Total Dissolved Solids	mg/L	80 – 2900	80 – 2900
Sodium	mg/L	35 – 200	35 - 200
Chloride	mg/L	3 - 250	3 - 250

Basis for General Waste Discharge Requirements

2. California Water Code Section 13260 requires any entity discharging waste or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the State, to file a Report of Waste Discharge with the Regional Board.
3. Whether an individual discharge of winery waste may affect the quality of waters of the State depends on the quantity of waste, the quality of waste, extent of treatment, soil characteristics, distance to surface water, depth to groundwater, and other factors. Wineries range in size from home winemaking operations producing 250 gallons of wine per year to very large commercial winemaking operations producing several million gallons of wine per year.

4. In general, waste discharges from commercial winemaking operations that discharge to other than a community sewer system (hereafter “Discharger” or “Winery”) may affect waters of the State and are required to submit a Report of Waste Discharge to the Regional Board.
5. The *Notice of Intent (NOI) to Comply with the Terms of the General Waste Discharge Requirements for Discharges of Winery Waste* (Attachment B) is equivalent to a Report of Waste Discharge.
6. In accordance with California Water Code Section 13263(i), Wineries covered under these General Waste Discharge Requirements for Discharges of Winery Waste (hereafter “General WDRs”); (1) produce waste by similar operations, (2) involve similar types of waste, (3) require similar treatment standards, and (4) are more appropriately regulated under General WDRs.

Who Must Apply? And When¹?

7. **Winery with Waiver of WDRs** – According to California Water Code Section 13269, all existing Waivers of Waste Discharge Requirements (WDRs) expire December 31, 2002. Any Winery covered by a Waiver of WDRs must apply for coverage under these General WDRs by **January 1, 2003**.
8. **Winery without WDRs** – Any Winery without WDRs must apply for coverage under these General WDRs. A “Large” Winery must submit an application by **May 1, 2003**. “Large” is defined as crushing greater than or equal to 1,500 tons of grapes per year, or producing greater than or equal to 100,000 cases or 240,000 gallons of pressed wine per year. All other Wineries without WDRs must submit an application by **September 1, 2003**.
9. **Winery with Individual WDRs** – A Winery currently covered by individual WDRs will be considered for coverage under these General

WDRs when the individual WDRs are scheduled for review or renewal. The date of review is specified within the individual WDRs.

How Do I Apply?

10. **Application Process** – The process to apply for coverage under these General WDRs is described in Section A below.
11. **Small Winery Waiver** – “Small” Wineries with depth to groundwater at their disposal area greater than 100 feet generally pose minimal threat to water quality and may not be required to apply for coverage under these General WDRs. “Small” is defined as crushing less than or equal to 80 tons of grapes per year, or producing less than or equal to 5,000 cases or 13,000 gallons of pressed wine per year. The process to obtain a Small Winery Waiver is described in Section A below.

Is a Fee Required?

12. **Annual Fee** – An annual fee is required for coverage under these General WDRs. The annual fee depends on the discharge’s Threat to Water Quality and Complexity Rating, as defined in the fee schedule in California Code of Regulations Title 23, Division 3, Chapter 9, Section 2200. The Threat to Water Quality and Complexity Rating for discharges covered by these General WDRs is III-B, with a corresponding annual fee of \$900.

Is Monitoring Required?

13. **Monitoring and Reporting** – Monitoring and Reporting Program No. R3-2002-0084 (General MRP) is part of this Order and is included as Attachment A. The General MRP requires the Discharger to perform regular monitoring and reporting of water supply, wine production, chemical usage, effluent, septic system(s), disposal area(s), and solid waste disposal. Groundwater and/or disposal area soils monitoring may also be required. The General MRP may be modified by the Executive Officer.

¹ If you have any questions about whether or not you must apply for coverage under these General WDRs, you may contact Regional Board staff at (805) 549-3147.

Basis of Requirements

14. **Basin Plan** – The *Water Quality Control Plan, Central Coast Basin* (Basin Plan) was adopted by the Regional Board on September 8, 1994. The Basin Plan incorporates State Board plans and policies by reference and contains a strategy for protecting beneficial uses of surface and ground waters throughout the Region. These General WDRs require Dischargers to comply with all applicable provisions of the Basin Plan.
15. This Order establishes minimum standards for discharges of winery waste. The Discharger shall comply with any more stringent relevant standards in the Basin Plan. In the event of a conflict between the provisions of this Order and the Basin Plan, the more stringent provision prevails.
16. **Beneficial Uses** – Existing and potential beneficial uses of ground water within the Central Coast Region include municipal and domestic supply, agricultural supply, and industrial process and service supply.

Regulatory Considerations

17. **Storm Water** – California Water Code Section 13399 requires Wineries that discharge polluted storm water runoff offsite to obtain coverage under the *Statewide General Storm Water Permit for Industrial Activities*. Wineries should contact Regional Board storm water program staff at (805) 549-3147 to determine their applicability.
18. This Order does not preempt or supersede the authority of municipalities, flood control agencies, or other local agencies to prohibit, restrict, or control discharges of waste subject to their jurisdiction.
19. **California Environmental Quality Act, Existing Wineries** – The action to adopt these General WDRs is intended to maintain water quality. Projects authorized under these General WDRs that are existing wineries that have not expanded the amount of waste they discharge are categorically exempt from the provisions of the California Environmental Quality Act (“CEQA”, Public Resources Code

sections 2100 et seq.) pursuant to sections 15301, exemption for existing projects and 15308, actions by regulatory agencies for the protection of the environment.

20. **California Environmental Quality Act, New and Expanded Wineries** – New wineries and expansion of existing wineries may not be covered by these General WDRs until after a government agency has completed the lead agency responsibilities under CEQA.
21. **Anti-Degradation** – This Order is consistent with the provisions of State Water Resources Control Board Resolution No. 68-16, “Statement of Policy with Respect to Maintaining High Quality of Waters in California.”
22. **Public Notification** – The Regional Board has notified all known potential Dischargers and all other known interested parties of the intent to adopt these General WDRs.
23. **Public Meeting** – The Regional Board, in a public meeting on November 1, 2002, heard and considered all comments pertaining to the adoption of these General WDRs.

THEREFORE, IT IS HEREBY ORDERED that, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, a Discharger of winery waste shall comply with the following:

A. APPLICATION PROCESS

1. A Discharger seeking authorization to discharge under these General WDRs shall submit a complete *Notice of Intent (NOI) to Comply with the Terms of the General Waste Discharge Requirements for Discharges of Winery Waste* and first annual fee (payable to the State Water Resources Control Board) to the Executive Officer. The NOI is included as Attachment B of these General WDRs. The information required with the NOI is equivalent to a Report of Waste Discharge.
2. Coverage under the General WDRs will be extended to a Winery when they receive a letter of approval from the Executive Officer.

3. Public notification and/or Regional Board review of the Executive Officer's intent to authorize a discharge under these General WDRs may delay authorization to discharge under these General WDRs.
4. Wineries covered under these General WDRs shall submit an updated NOI to the Executive Officer when there is any change in the information submitted within its original NOI, or any change in activities at the facility, that may affect the quality or quantity of the waste discharge.
5. These General WDRs do not authorize any discharges from facilities that have not submitted a Notice of Intent or that have not received authorization to discharge from the Executive Officer.
6. The Executive Officer may require any Discharger authorized to discharge under these General WDRs to apply for and obtain individual WDRs. If individual WDRs are issued for a discharge, then the applicability of these General WDRs for the discharge is immediately terminated on the effective date of the alternative individual WDRs.
7. **Small Winery Waiver** – A "Small" Winery that poses minimal threat to water quality may not be required to apply for coverage under these General WDRs if they satisfy the following:
 - a) Contact Regional Board staff (805/549-3147) to describe your operation and discuss its applicability;
 - b) Provide adequate proof that depth to groundwater at the disposal area is greater than 100 feet. Depth to groundwater may be reduced to 20 feet if wastewater is incorporated into vineyard irrigation water and applied at reasonable agronomic rates;
 - c) Allow Regional Board staff to visit your facility if deemed necessary by staff;
 - d) Submit written certification under penalty of perjury stating you will voluntarily comply with the Prohibitions, Recommendations, and Specifications of these General WDRs;

- e) Receive written notification from the Executive Officer that the requirement to apply for WDRs is waived, pursuant to California Water Code Section 13269.

This waiver is intended for facilities that pose minimal threat to water quality.

8. Following review of NOI submittal, staff may determine that the waiving of requirements is appropriate. Following waiving of WDRs, changes to the facility may render a waiver inappropriate. As a result, when there is any change in the information submitted within its original NOI, or any change in activities at the facility, that may affect the quality or quantity of the waste discharge, the Discharger shall submit an updated NOI to the Executive Officer.

B. PROHIBITIONS

1. The discharge of any waste to surface waters is prohibited.
2. The discharge of waste other than winery wastewater (e.g. domestic wastewater) into a surface treatment and disposal system (e.g. ponds, spreading basins) is prohibited.
3. The discharge of waste classified as "hazardous," or "designated," as defined in California Code of Regulations, Title 22, Section 66261.3 et. seq. and California Water Code Section 13173, respectively, to any part of the wastewater system is prohibited.
4. The discharge or reuse of waste on land that is not under the control of the discharger is prohibited unless specifically authorized by the Executive Officer.
5. Bypass or overflow of treated or untreated winery waste from transport, treatment, and disposal facilities are prohibited.
6. Creation of a condition of pollution, contamination, or nuisance, as defined by of California Water Code Section 13050, is prohibited.
7. The discharge of stillage is prohibited.

C. RECOMMENDATIONS

Pollutant Source Control Guidelines

1. Water-conserving devices (e.g. pressure washers, trigger-handled spray nozzles, automatic barrel cleaners, stainless steel tanks, and smooth floors) should be used to minimize wastewater generation.
2. Use of cleaning chemicals should be minimized. Ozonated washwater is preferred for cleaning.
3. When using water-softening devices, canister-type water softeners or similar alternatives should be used to prevent the discharge of salt brine. Where self-regenerating water softeners are used, the number of connections to the water softener should be minimized.
4. Lees, bentonite, and diatomaceous earth should be excluded from treatment and disposal systems to the extent practicable.

Design Guidelines

5. Large solids should be separated from winery wastewater through redundant screening and removal systems (e.g. with screened floor drains, rotary drum screens, and/or settling basins) prior to further treatment and disposal.
6. Winery wastewater treatment and disposal systems should be designed to accommodate projected future growth in wine production.
7. Winery wastewater treatment and disposal systems should beneficially reuse (e.g. for vineyard irrigation, frost protection, dust abatement) winery wastewater wherever feasible.
8. Where the disposal area's soil buffering capacity may be insufficient, winery wastewater pH should be neutralized to between 6.0 and 8.5 prior to disposal/reuse. Otherwise, disposal area soils and/or groundwater monitoring may be required.
9. To prevent odor nuisance and impacts to groundwater where raw winery wastewater is discharged to land surface, organic loading

rate should not exceed a 30-day average of 100 pounds of Biochemical Oxygen Demand (BOD₅) per acre per day.

10. The use of septic systems, particularly subsurface absorption systems, for winery wastewater is discouraged. However, if septic systems are used, they shall be designed for the unique characteristics of winery wastewater. In particular, the following conditions should be addressed by the septic system design:
 - a. Lees, bentonite, and diatomaceous earth may clog and destroy a soil absorption system, therefore should be excluded from the septic system.
 - b. Winery wastewater flow fluctuates greatly and solids (particularly lees) do not settle easily, therefore a large septic tank(s) and effluent filter(s) are required to prevent solids from passing into and degrading the soil absorption system. The hydraulic detention time of septic tanks should be no less than 48 hours. Soil absorption system sizing shall be based on the average daily flow during the peak flow week (generally the peak harvest week).
 - c. Septic tank(s) contents should be easily accessible to inspect solids levels, pump out solids, and clean/replace effluent filters.
 - d. The organic content of winery wastewater effluent from septic tanks, as measured by Biochemical Oxygen Demand (BOD₅), is generally much greater than domestic wastewater. The organic matter causes excessive slime formation that will clog a soil absorption system if the soil absorption system is not periodically rested. Dual soil absorption systems are necessary to allow alternating wastewater loading and resting.
 - e. Inspection risers should be installed in soil absorption systems to monitor water levels.

11. Winery wastewater treatment and disposal systems should be designed to minimize chemical addition and maintenance.

D. SPECIFICATIONS

Design Specifications

1. Winery wastewater shall be captured, treated, and disposed separately from domestic wastewater. Combined subsurface disposal may be authorized in writing by the Executive Officer.
2. Winery wastewater treatment and disposal systems shall be designed for the maximum daily flow of wastewater and organic loading generated (generally at the peak of crush season), including flows resulting from precipitation.
3. Wastewater flow rates shall be measured with an accurate flow measurement method or device.
4. Winery wastewater treatment ponds shall be lined with either a relatively impermeable membrane, two feet of soil with a permeability of less than 10^{-6} centimeters per second, or an engineered alternative approved in writing by the Executive Officer.
5. Winery wastewater treatment ponds shall be designed to contain all wastewater flows and rainfall from any 100-year, 24-hour storm event.
6. Winery wastewater treatment ponds shall have a foundation or base capable of providing support for the structures, and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift and all effects of ground motions resulting from at least the maximum probable earthquake, as certified by a registered civil engineer or certified engineering geologist.
7. Subsurface soil absorption systems shall be designed in accordance with Section VIII.D.3 of the Basin Plan.

8. The distance between any soil absorption system's trench bottom and groundwater, including perched groundwater, shall be no less than the following:

Percolation Rate (minutes / inch)	Distance (feet)
<1	50
1 – 4	20
5 – 29	8
>30	5

9. No part of the disposal system(s) shall extend to a depth where waste may pollute groundwater.
10. New winery wastewater systems with a subsurface disposal area shall reserve sufficient land area for 100-percent replacement of the disposal area.
11. The wastewater system shall not be located where it will alter the existing drainage pattern of the site, including alteration of the course of a stream or river.

Effluent Limitations

12. Winery wastewater flow shall not exceed the design capacity of the treatment and disposal system.
13. Where raw winery wastewater is discharged to land (such as to a spreading basin), organic loading rate shall not exceed 300 pounds of Biochemical Oxygen Demand (BOD₅) per acre per day at any time.

Groundwater Limitations

14. The discharge shall not cause a statistically significant increase of mineral constituent concentrations in underlying groundwater.
15. The discharge shall not cause concentrations of chemicals and radionuclides in groundwater to exceed limits set forth in Title 22 of the California Code of Regulations or Table 3.8 of the Basin Plan.

Operation Specifications

16. At least two feet of freeboard shall be maintained at all times in any pond or spreading basin containing winery wastewater.

17. The dissolved oxygen concentration in the upper zone (one foot) of aerated or oxidation pond systems shall not be less than 1.0 mg/L at any time.
18. Where spreading basins are used for treatment and disposal, the spreading basins shall be operated in a regular rotating sequence, with a rotation frequency no less than weekly, or as agreed upon by the Executive Officer. The spreading basin bed slope shall be maintained to ensure even distribution of wastewater and prevent standing water. Wastewater contained in spreading basins shall be no deeper than four (4) inches.
19. Solids accumulation in all septic tanks shall be measured at least annually and cleaned when it appears that either the bottom of the scum layer will be within four (4) inches of the bottom of the outlet device or the sludge level will be within ten (10) inches of the outlet device before the next scheduled inspection.
20. Dual leachfield systems shall be operated in a regular rotating sequence, with a rotation frequency no less than annually.

Solids Disposal Specifications

21. Collected screenings and other solids removed from liquid wastes that will not and/or cannot be used agronomically shall be disposed of at a legal point of disposal, and in accordance with Title 27, Division 2 of the California Code of Regulations.
22. In no case shall accumulated sludge from a wastewater pond be used as an agronomic addition to fields without written authorization from the Executive Officer.
23. If accumulated sludge from a wastewater pond will be used as an agronomic addition to fields, a proposal containing, at a minimum, the following information shall be submitted in writing to the Executive Officer before commencement:
 - a. The physical properties of the sludge to be removed from the pond, including the volume and percent solids.

- b. A summary of laboratory analytical results for a composite sludge sample. At a minimum, the analyses shall include pH, cadmium, chromium, copper, lead, nickel, zinc, and total nitrogen. A leachability test of the sludge may be required if deemed necessary by the Executive Officer.
- c. Descriptions of the proposed land application areas, including a map denoting watercourses, approximate depth to groundwater, acreage and the crops to be grown thereupon.
- d. Calculations showing the sludge will be applied at reasonable agronomic rates (based on nutrient uptake of the crop).
- e. A project schedule. Sludge application shall be confined to the dry season, between April 15 and October 15 each year. Sludge shall be spread and incorporated into the soil in a manner to prevent erosion, runoff or any nuisance conditions.
- f. A statement verifying that no hazardous waste or domestic waste has been discharged to the ponds.

Wastewater Recycling/Re-Use Specifications

23. Treated winery wastewater shall not be applied to land within 24 hours of a forecasted rain event, during rainfall, 24 hours after a rainfall event, or when soils are saturated.
24. Treated winery wastewater shall be applied in such a manner so as not to exceed vegetative demand.
25. Land application of treated winery wastewater shall be managed to prevent ponding, runoff, and erosion.
26. There shall be no connection between a potable water supply and a treated winery wastewater distribution system.
27. All piping, valves, and outlets shall be marked to differentiate treated winery wastewater from other sources of water.

Nonpoint Source Control

28. Management practices shall be implemented to prevent sediments, nutrients, herbicides, pesticides, and other constituents of concern from entering waters of the state. Examples of management practices aimed at sediment reduction include, but are not limited to, out sloping roads, using cover crops, water bars, rolling dips, et cetera. Similar types of management practices exist for reducing nutrients, herbicides, pesticides, and other constituents of concern.
29. Dischargers that own vineyards are encouraged to join the Central Coast Vineyard Team and participate in their self-assessment protocol. The Central Coast Vineyard Team is a non-profit group whose mission is to identify and promote the most environmentally safe, viticulturally effective, and economically sustainable farming methods, while maintaining or improving the quality and flavor of winegrapes. The Central Coast Vineyard Team may be reached online at www.vineyardteam.org, by electronic mail at info@vineyardteam.org, or by telephone at (805) 434-4848.

E. STANDARD PROVISIONS

1. The Discharger shall comply with Monitoring and Reporting Program R3-2002-0084, included as Attachment A of these General WDRs, and any revisions prescribed thereto by the Executive Officer.
2. A copy of these General WDRs shall be kept at the discharge facility for reference by operating personnel. Key operating and site management personnel shall be familiar with its contents.
3. In the event the discharger wishes to terminate authorization under these General WDRs, the Discharger shall submit a Notice of Termination (NOT). A Regional Board staff inspection of the facility may be required prior to terminating coverage. Termination from coverage will occur on the date specified in the NOT, unless notified otherwise. All discharges shall cease before the date of termination, and any discharges on or after this date shall be considered in violation of these General WDRs unless covered by other WDRs.
4. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of these General WDRs by letter, a copy of which shall be immediately forwarded to the Executive Officer.
5. The Discharger shall take all reasonable steps to prevent any discharge in violation of these General WDRs.
6. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) to achieve compliance with these General WDRs. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with these General WDRs.
7. The Discharger shall furnish the Regional Board, within a reasonable time, any information that the Board may request to determine compliance with these General WDRs.
8. The Discharger shall allow the Regional Board or its authorized representatives to:
 - a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records pertinent to this permit are kept;
 - b. Inspect and photograph any facilities, equipment (including monitoring and control equipment), practices, or operations pertinent to these General WDRs;
 - c. Have access to and copy any records pertinent to this permit; and
 - d. Sample or monitor for the purposes of assuring permit compliance.

9. All technical and monitoring reports submitted pursuant to this Order are required pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order, attachments to this Order, or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer, may subject the discharger to enforcement action pursuant to Section 13268 of the California Water Code. The Regional Board will base all enforcement actions on the date of Order adoption.
10. All reports, NOI, or other documents required by these General WDRs, and other information requested by the Regional Board shall be signed by a person described below or by a duly authorized representative of that person.
 - a. For a corporation: by a responsible corporate officer such as: (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (b) any other person who performs similar policy or decision-making functions for the corporation; or (c) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
11. Any person signing a document under Provision 10 makes the following certification, whether written or implied:

"I certify under penalty of law this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
12. The Discharger shall give notice to the Regional Board as soon as possible of any planned alterations to the permitted facility that may change the nature or concentration of pollutants in the discharge.
13. Violations of this General Permit may result in enforcement actions as authorized under the California Water Code.
14. These General WDRs will be reviewed on or about **November 1, 2007**, or sooner at the discretion of the Regional Board. A discharger enrolled under these General WDRs will be automatically enrolled under the reissued General WDRs, unless a NOT is submitted to terminate coverage.

I, Roger W. Briggs, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on November 1, 2002.

Roger W. Briggs
Executive Officer